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SCIENCE

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MSS. Intended for publication and books, etc., intended for review should be sent to Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

PLANT ECOLOGY AND ITS RELATION TO AGRICULTURE¹

I. CONTENT OF ECOLOGY

A. Nature and Scope.—In beginning this discussion, a brief statement as to the nature and scope of ecology seems to be desirable on account of the hazy popular notions on the subject. Outside of a rather narrow circle one usually finds a total ignorance of the meaning of the word itself, and even among biologists, some are familiar only with the observational side, due probably to the early prominence of the "car-window" school of ecologists, while others consider that the subject-matter of ecology might better be divided between morphology and physiology, and frankly state their opinion that there is no such subject as ecology.

However, there seems to be a mass of subject-matter belonging to neither department exclusively, but partly to each, which would fairly warrant the formation of another department. This has been named ecology, and may be defined as the science of organisms as affected by the factors of their environment. The connection with physiology is the closer of the two, and in fact, the two subjects overlap to a certain extent, but whether we call this overlapping segment ecological physiology or physiological ecology, the character of its subject-matter is sufficiently different to warrant a separate category and different treatment.

The methods of ecology have been, of course, largely descriptive, but they are also becoming increasingly quantitative, employing in many cases elaborate and deli-

¹ Delivered before the Illinois Academy of Science, February 23, 1917.